

REMARKS

Claims 1-38 are pending in the application, with Claims 1-4 and 21-38 being independent. In this Amendment, all of the independent claims have been amended.

In view of the amendments above and the remarks below, Applicant respectfully requests reconsideration and allowance of the present application.

In the Office Action, Claims 1, 2, 5, 6, 9, 10, 13, 14, 21, 22, 25, 26, 29, and 30 were rejected under 35 U.S.C. § 102(e) over U.S. Patent No. 6,144,375 (Jain). Claims 3, 4, 7, 8, 11, 12, 15-20, 23, 24, 27, 28, and 31-38 were rejected under 35 U.S.C. § 103(a) over Jain, in view of U.S. Patent No. 6,263,022 (Chen).

Applicant respectfully traverses these rejections. Nonetheless, to advance prosecution, Applicant has amended all of the independent claims to even more clearly recite their patentable features. At least as amended, Applicant submits that the independent claims are patentably distinguishable from the cited art.

Specifically, independent Claim 1 relates to an image processing apparatus including display means, designation means, and encoding means. The display means displays a moving image on the basis of input image data. The designation means designates a partial region defined by user-selected points in a display screen of the display means. The encoding means encodes the image data. The display means of Claim 1 displays a still image of the moving image during designation by the designation means. The encoding means encodes the image data with an image included in the region designated by the designation means of the moving image displayed by the display means being decodable to have higher image quality than an image of a non-designated region.

Independent Claim 2 also relates to an image processing apparatus including display means, designation means, and encoding means. The display displays a moving image on the basis of input image data. The designation means designates an object defined by user-selected points included in the moving image displayed by the display means, and the encoding means encodes the image data. The display means of Claim 2 displays a still image of the moving image during designation by the designation means. The encoding means encodes the image data with an image indicating the object designated by the designation means of the moving image displayed by the display means being decodable to have higher image quality than an image of a non-designated portion.

Independent Claim 3 also relates to an image processing apparatus including display means, designation means, and encoding means. As in Claims 1 and 2, the display means displays a moving image on the basis of input image data. As in Claim 1, the designation means designates a partial region defined by user-selected points in a display screen of the display means, and the encoding means encodes the image data. Also as in Claims 1 and 2, the display means displays a still image of the moving image during designation by the designation means. The encoding means in Claim 3 includes means for generating transform coefficients by computing discrete wavelet transforms of the image data, means for generating quantization indices by quantizing the transform coefficients, and means for generating encoded data by decomposing the quantization indices into bit planes, and executing arithmetic coding for the respective bit planes. The encoding means in Claim 3 also shifts up the quantization indices corresponding to an image included in the

region designated by the designation means of the moving image displayed by the display means by a predetermined number of bits.

Independent Claim 4 also relates to an image processing apparatus including display means, designation means, and encoding means. As in Claims 1-3, the display means displays a moving image on the basis of input image data. As in Claim 2, the designation means designates an object defined by user-selected points included in the moving image displayed by the display means, and the encoding means encodes the image data. As in Claims 1-3, the display means displays a still image of the moving image during designation by the designation means. The encoding means, as in Claim 3, includes means for generating transform coefficients by computing discrete wavelet transforms of the image data, means for generating quantization indices by quantizing the transform coefficients, and means for generating encoded data by decomposing the quantization indices into bit planes, and executing arithmetic coding for the respective bit planes. Also in Claim 4, the encoding means shifts up the quantization indices corresponding to an image indicating the object designated by said designation means of the moving image displayed by the display means by a predetermined number of bits.

Independent Claims 21-24 relate to a digital camera. The digital cameras recited in those claims include features parallel to those recited for the image processing apparatus of Claims 1-4, respectively. In addition, the digital cameras of Claims 21-24 include image sensing means for generating image data by sensing an image, and means for saving the encoded data encoded by the encoding means.

Independent Claims 25-28 relate to image processing methods. The methods of these claims comprise steps that perform functions parallel to those recited for the means recited in Claims 1-4, respectively.

Independent Claims 29-32 relate to programs for making a computer function as the display means, designation means, and encoding means as recited in Claims 1-4, respectively.

Independent Claim 33 relates to an image processing apparatus including display means, designation means, encoding means, storage means, and decoding means. The display means of Claim 33 displays a moving image on the basis of input image data. The designation means designates a partial region defined by user-selected points in a display screen of the display means. The encoding means generates encoded data by encoding the image data. The storage means stores the encoded data, and the decoding means decodes the encoded data stored in the storage means. The display means of Claim 33 displays a still image of the moving image during designation by the designation means. The encoding means encodes the image data with an image included in the region designated by the designation means of the moving image displayed by the display means being decodable to have higher image quality than an image of a non-designated region. The decoding means in Claim 33 decodes encoded data at least from the beginning to the end of designation of the region by the designation means of the encoded data stored in the storage means. The encoding means re-encodes the decoded image data with an image corresponding to the region of an image that corresponds to the image data decoded by the

decoding means being decodable to have higher image quality than an image of the non-designated region.

Independent Claim 34 also relates to an image processing apparatus including display means, designation means, encoding means, storage means, and decoding means. The designation means of Claim 34 designates an object defined by user-selected points included in the moving image displayed by the display means. The remaining means recited in Claim 34 perform functions parallel to those recited for the means of Claim 33, except that they involve the designated object, rather than the designated partial region recited in Claim 33.

Independent Claims 35 and 36 relate to image processing methods. Those methods recite steps performing functions parallel to the functions performed by the means recited in Claims 33 and 34, respectively.

Independent Claims 37 and 38 relate to programs for making a computer function as the means recited in independent Claims 33 and 34, respectively.

With the features recited in various language in each of the independent claims, a partial region, or an object, that is defined by user-selected points is designated, and a still image of the moving image is displayed during designation. For example, as illustrated in Figures 20A-20C, and as discussed in the specification at page 53, line 4, *et seq.*, one may select a number of points to define a partial region or an object and this partial region or object is then processed as recited in the independent claims. For example, as discussed at page 54, lines 10-16, a user presses select button 36e, shown in Figure 16B - 16C, to select each of points P1 - P4, and those points define a partial region

or object of the displayed image. That region is designated as a high image quality region, and may be subject to further processing, as described in the specification and recited in the independent claims.

Applicant submits that Jain, taken singly or in combination with Chen, does not teach or suggest designating a partial region or an object defined by user-selected points, and displaying a still image of the moving image during designation, in combination with the other recited claim features.

Jain is directed to a method and apparatus for interactive viewing. Applicant submits that selection of a football player, as described at column 30, lines 43-47 of Jain, is not a teaching or suggestion of designating a partial region or object defined by user-selected points in a display screen, as recited, in various language, in each independent claim. Rather, in Applicant's understanding, Jain teaches that a user clicks on a football player, and does not designate a region defined by user-selected points. Moreover, unlike Applicant's claimed invention, in Jain, the selected "player's every move is continuously displayed". (Jain, column 25, lines 2-4.)

Chen, relating to a system and method for fine, granular, scalable video with selective quality enhancement, does not cure the deficiencies of Jain, as discussed above. In the outstanding Office Action, Chen was cited for disclosing means for generating transform coefficients, means for generating quantization indices, means for generating encoded data by decomposing the quantization indices into bit planes, and executing arithmetic coding, and the encoding means shifting up the quantization indices. In

Applicant's understanding, however, Chen does not cure the deficiencies of Jain discussed above.

Accordingly, Applicant submits that the independent claims are patentably distinguishable from Jain, taken singly or in combination with Chen.

Moreover, Applicant submits that the dependent claims are patentably distinguishable from the cited art for at least the reasons discussed above for the independent claims. In addition, Applicant submits that the dependent claims recite additional features further distinguishing them from the cited art, and respectfully requests individual consideration of each dependent claim.

In view of the foregoing, Applicant submits that the application is in condition for allowance. Favorable reconsideration and early passage to issue are respectfully requested.

Applicant's undersigned attorney may be reached in our Washington, D.C., office by telephone at (202) 530-1010. All correspondence should continue to be directed to our address below.

Respectfully submitted,

Anne M. Maher  
Attorney for Applicant  
Anne M. Maher  
Registration No. 38,231

FITZPATRICK, CELLA, HARPER & SCINTO  
30 Rockefeller Plaza  
New York, New York 10112-3801  
Facsimile: (212) 218-2200

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